

Listing of the Claims

The listing of the claims will replace all prior versions and listings of claims in the application.

What is claimed is:

Claims 1-3 cancelled

4. (currently amended) An integrated process for the production of acetic acid and vinyl acetate comprising the steps:

(a) producing in a first reaction zone a first product stream comprising acetic acid, wherein the acetic acid is produced using an exothermic reaction, and wherein at least a portion of the heat from the production of acetic acid is removed from the first reaction zone and at least a portion of the heat removed from the production of acetic acid is transferred into a heat transfer system;

(b) contacting in a second reaction zone an acetic acid reaction stream comprised of at least a portion of the acetic acid from the first product stream with an oxygen-containing gas in the presence of a catalyst to produce a second product stream comprising vinyl acetate monomer;

(c) directing at least a portion of the second product stream to a purification section for purifying vinyl acetate to purify at least a portion of the vinyl acetate in the second product stream; and

(d) removing at least a portion of the heat transferred to the heat transfer system and providing at least a portion of the heat removed from the heat transfer system to at least one of the acetic acid reaction stream and the purification section for purifying vinyl acetate, wherein the first product stream is produced by carbonylation of an alkyl alcohol with carbon monoxide in a liquid reaction medium in the first reaction zone, and ~~The process of claim 3~~
wherein the heat transfer system comprises a steam condensate stream, and wherein at least a portion of the heat removed from the production of acetic acid is transferred to the steam condensate stream which is used to provide heat removed from the production of acetic acid

to at least one of the acetic acid reaction stream and the purification section for purifying vinyl acetate.

5. (original) The process of claim 4 wherein the steam condensate stream is directed to a flash vessel maintained at a temperature of about 150°C to about 160°C.

6. (original) The process of claim 5 wherein the flash vessel is maintained at a pressure of about 4.0 kg/cm² to about 5.3 kg/cm².

7. (previously presented) The process of claim 4 wherein heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a vinyl acetate azeotrope column feed stream.

8. (previously presented) The process of claim 4 wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a reboil stream of a light ends column in the purification section for purifying vinyl acetate.

9. (previously presented) The process of claim 4 wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a reboil stream used in conjunction with a finishing column in the purification section for purifying vinyl acetate.

10. (previously presented) The process of claim 4 wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to the acetic acid reaction stream.

11. (previously presented) The process of claim 4 wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a reboil stream of a light ends column in the purification section for purifying vinyl

acetate and to a reboil stream used in conjunction with a finishing column in the purification section for purifying vinyl acetate.

Claims 12 - 20 Cancelled

21. (currently amended) An integrated process for the production of acetic acid and vinyl acetate comprising the steps:

(a) producing in a first reaction zone a first product stream comprising acetic acid, wherein the acetic acid is produced using an exothermic reaction, and wherein at least a portion of the heat from the production of acetic acid is removed from the first reaction zone and at least a portion of the heat removed from the production of acetic acid is transferred into a heat transfer system;

(b) contacting in a second reaction zone an acetic acid reaction stream comprised of at least a portion of the acetic acid from the first product stream with an oxygen-containing gas in the presence of a catalyst to produce a second product stream comprising vinyl acetate monomer;

(c) directing at least a portion of the second product stream to a purification section for purifying vinyl acetate to purify at least a portion of the vinyl acetate in the second product stream; and

(d) removing at least a portion of the heat transferred to the heat transfer system and providing at least a portion of the heat removed from the heat transfer system to at least one of the acetic acid reaction stream and the purification section for purifying vinyl acetate,

~~The integrated process of Claim 1,~~ wherein the heat transfer system comprises a pump-around condensate loop in which the heat from the production of the acetic acid is removed from the first reaction zone through heat exchange between a hot reactor solution stream and a steam condensate stream.

22. (previously presented) The integrated process of Claim 21, wherein the steam condensate stream comprising the heat from the production of the acetic acid is transferred into a low pressure flash vessel.

23. (new) The integrated process of Claim 21, wherein the steam condensate stream is directed to a flash vessel maintained at a temperature of about 150°C to about 160°C.

24. (new) The process of Claim 23 wherein the flash vessel is maintained at a pressure of about 4.0 kg/cm² to about 5.3 kg/cm².

25. (new) The process of Claim 21, wherein heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a vinyl acetate azeotrope column feed stream.

26. (new) The process of Claim 21, wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a reboil stream of a light ends column in the purification section for purifying vinyl acetate.

27. (new) The process of Claim 21, wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a reboil stream used in conjunction with a finishing column in the purification section for purifying vinyl acetate.

28. (new) The process of Claim 21, wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to the acetic acid reaction stream.

29. (new) The process of claim 21, wherein the heat removed from the production of acetic acid is transferred from the steam condensate of the heat transfer system to a reboil stream of a light ends column in the purification section for purifying vinyl acetate and to a reboil stream used in conjunction with a finishing column in the purification section for purifying vinyl acetate.